

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TA 11812 WO	FOR FURTHER ACTION See Form PCT/IPEA/416																	
International application No. PCT/SE 2003/001013	International filing date (day/month/year) 16.06.2003	Priority date (day/month/year) 18.06.2002																
International Patent Classification (IPC) or national classification and IPC B23B 27/04																		
Applicant SANDVIK AB et al																		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>1</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																		
<p>4. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>			<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input type="checkbox"/> Box No. VIII	Certain observations on the international application
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Date of submission of the demand 12.12.2003	Date of completion of this report 17.09.2004																	
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Form PCT/IPEA/409 (cover sheet) (January 2004)																		

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/001013

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-4 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____

- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 5 received by this Authority on 16.09.2004
- pages* _____ received by this Authority on _____

- ☒ the drawings:
- pages 1 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to the sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to the sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/001013

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The following documents were cited in the search report:

D1: EP 1025939 A1
D2: US 4887945 A
D3: US 5112164 A
D4: US 6186704 B1
D5: CH 688794 A5
D6: DE 3301919 A1

The documents cited in the International Search Report represent background art.

The invention defined in claims 1-8 amended with the letter of 16.09.2004, is not disclosed by any of these documents.

None of the cited documents gives any indication towards the claimed tool head for chip metal working with an insert clamping device comprising a nut roll receiving a clamp screw oriented perpendicularly to the nut roll. No relevant combination of the cited documents would lead a person skilled in the art to the invention defined in the claims.

Therefore, the invention defined in claims 1-8 is novel and is considered to involve an inventive step. It is also considered to be industrially applicable.

Patent claims

1. Tool head for chip metal working machining with a cutting insert (3), comprising a basic holder (1) and an insert holder (4) connected therewith the front portion of which is provided with an insert pocket located between a lower support portion (6) and an upper clamp portion (5) wherein said upper clamp portion (5) is actuatable by a press device into clamping surface engagement with the cutting insert (3) whereby the tool is provided with a slot (20) spaced from the insert pocket, the pressing device is in the shape of a clamp screw (19) having a conical head (18) received in a recess in the basic holder (1) and arranged to exercise a movement axially such that its conical head is inserted into said slot (20) and upon tightening provides such outward bending of the upper portion of the holder so that, due to its movement, a clamping of the insert is accomplished, c h a r a c t e r i z e d in that the nut roll (11a) provided for the receipt of the clamp screw (19) is received in a cylindrical recess (10a) oriented perpendicularly in relation to the longitudinal direction of the clamp screw (19) and the insert slot (7).
2. Tool head according to claim 1, c h a r a c t e r i z e d in that the basic holder (1) has a larger width than the insert holder (4) and that both are provided integrally in one piece.
3. Tool head according to any of the claim 1, c h a r a c t e r i z e d in that the screw-receiving recess (15) has a longitudinal extension at an angle oriented at an angle of 35-90° from the longitudinal direction of the insert pocket.
4. Tool head according to any of the claims 1-3, c h a r a c t e r i z e d in that the insert receiving slot (7) in the rearward direction extends into a slot extension (9) with a smaller height than the forward slot (7).
5. Tool head according to any of the claims 1-4, c h a r a c t e r i z e d in that the rear insert end surface (3a) is arranged to axially abut against a support surface (8) in the holder (4) which preferably extends essentially perpendicularly in relation to the underneath surface (3b) of the insert.
6. Tool head according to any of the claims 1-5, c h a r a c t e r i z e d in that the longitudinal extension of the insert (3) is longer than the longitudinal extent of the lower support surface (4a) in the insert holder thus providing a side support for the insert from one side surface of the basic holder (1).
7. Tool head according to any of the claims 1-6, c h a r a c t e r i z e d in that the side surface of the basic holder (1) is provided with serrations (22) that extend in a direction parallel with the direction of the insert (3).
8. Tool head according to any of the claims 1-7, c h a r a c t e r i z e d in that the portion (23) located between the clamp screw (19) and the slot extension (9) of the basic holder (1) has a planar surface without serrations.